

Notice of Allowability

Application No.

10/728,969

Examiner

An H. Do

Applicant(s)

SILVERBROOK, KIA

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Application filed on 08 December 2003.
2. ☒ The allowed claim(s) is/are 1-6.
3. ☒ The drawings filed on 08 December 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 08 December 2003
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 12 December 2003 was filed and is being considered by the examiner.

Allowable Subject Matter

2. Claims 1-7 are allowed.
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jarrold et al (US 6,561,627) discloses a micro-electromechanical thermal actuator having a cantilever element extending from the base element and normally residing in a first position. Khuri-Yakub et al (US 5,828,394) discloses a fluid drop ejector having one elastic wall membrane defining a nozzle and elements responsive to electrical signal for deflecting the membrane to eject droplets. Inui et al (US 5,719,604) discloses an inkjet head having a buckling body including a radially extending ribbed portion on its surface. Usui et al (US 5,255,016) discloses an inkjet head having a plurality of piezoelectric vibrating plates bending toward the nozzle to eject ink. Anagnostopoulos et al (US 5,812,159) discloses a printhead having a heater formed at the nozzle to separate the ink droplets.

Reasons for Allowance

4. The primary reason for the allowance of claim 1 is the inclusion of the limitation of an elongate actuator arm having a fixed end portion that is fast with the substrate and a free end portion that is spaced from the substrate, the elongate actuator arm incorporating a heating circuit that is connectable to a power supply to heat the actuator

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arm, at least a portion of the actuator arm being of a material having a coefficient of thermal expansion which is such that the material is capable of thermal expansion to do work the heating circuit being positioned to generate differential thermal expansion and contraction when heated and subsequently cooled to cause reciprocal displacement of the free end portion of the actuator arm; and a fluid ejection member that is fast with the free end of the elongate actuator arm to be positioned in the nozzle chamber such that said displacement of the free end portion of the actuator arm results in the ejection of fluid from the ink ejection port and. It is these limitations found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 571-272-2143.

The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



AD
May 10, 2004



Stephen D. Meler
Primary Examiner